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DESCRIPTION: **Combined Modification Document –
Modification Note 76
TCTO 31P1-4-108-632
Radar Product Generator
Modem/Circuit Changes for Open
Principal User Processor**

DATE OF ISSUE: October 19, 2004

QUANTITY OF ISSUE: EACH

**RADAR PRODUCT GENERATOR MODEM/CIRCUIT
CHANGES FOR OPEN PRINCIPAL USER PROCESSOR**

**DOPPLER METEOROLOGICAL RADAR
WSR-88D**



DoD Distribution Statement A - Approved for public release; distribution is unlimited.

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NWS APPROVAL:

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BY ORDER OF THE SECRETARY OF THE AIR FORCE


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NWS: EHB-6, Modification Note 76
DoD: AFTO 31P1-4-108-632

1. SUBJECT

Radar Product Generator (RPG) Modem/Circuit Changes for Open Principal User Processor (OPUP).

2. PURPOSE

This document provides instructions to add/relocate modem(s), program the new/relocated modem(s), and relocate or add new dedicated DoD telecommunications circuits to the NEXRAD RPG demarc blocks. This change is required to support conversion of the DoD radar display system called the OPUP system from X.25 to PPP.

The timing for this modification is driven by the OPUP deployment schedule. Prior to starting this modification, all sites must have completed both RPG Modification Notes 65 and 71. This modification may be performed simultaneously with or after RPG Modification Note 72 and may be performed prior to Modification Note 73.

NWS EHB 6-525, AFTO 31P1-4-108-452-1, Revision 1, 30 April 2003, provides the documentation change for all OPUP driven RPG modifications (Modification Notes 65, 71, 72, 73 and 76). The authority for this modification is ECP 0158, ORPG PPP SERIAL HAREWARE FOR DoD.

For additional information concerning this document, contact the Radar Operations Center (ROC) Hotline, Norman, OK; phone number: (800) 643-3363 or (405) 573-8900 or by e-mail at NEXRAD.Hotline@noaa.gov. An electronic copy of this document can be found at the following internet address:
www.roc.noaa.gov/ssb/sysdoc/techman/tmlinks.asp

3. SITES AFFECTED

See [ATTACHMENT 5](#).

4. ESTIMATED COMPLETION DATE

This modification must be reported completed no later than 60 days after the date the kit was shipped from the National Logistics Support Center (NLSC).

5. EQUIPMENT AFFECTED

Radar Product Generator Group.

6. SPARES AFFECTED

Not applicable.

7. MODIFICATION ACCOMPLISHED BY

Site electronics technicians will perform this modification. One technician is required to perform this action.

8. MATERIAL REQUIRED

Kit C.

Nomenclature	Part Number	NSN	Qty
Modem Card, Dedicated Data	1219739-207	5895-01-377-7105	1

The following common tools/supplies are required to complete the modification:

- ESD Wrist Strap
- Eight Wire Modular Adapter, Harris 10220-100 or equivalent
- Impact Punch Tool, Jensen 23-814 or equivalent
- Impact Punch Tool, 66 Blade, Jensen 23-066 or equivalent

9. SOURCE OF MATERIALS

Kits are requisitioned by the ROC Retrofit Management Team and shipped at no cost to the site.

10. SPECIAL TOOLS AND TEST EQUIPMENT REQUIRED

Transmission Line Test Set AM-48 (SERD 15).

11. TIME AND PERSONNEL REQUIRED

Work Phases	Work-hours
Unpacking	0.25
Disassembly	0.0
Installation	1.5
Assembly	0.0
Operational Check	0.25
Total Work-hours	2.0

12. DOCUMENTS AFFECTED

Not applicable.

13. VERIFICATION STATEMENT

This modification was successfully installed at the Radar Operations Center.

14. DISPOSITION OF REMOVED AND REPLACED PARTS/MATERIALS

Dispose of serial cables W273, W287, W288, W289, and W290 removed from the PTI boxes and modems locally, following local procedures.

15. PROCEDURES

- All Sites:
 - Complete [ATTACHMENT 1](#) through [ATTACHMENT 4](#).
 - [ATTACHMENT 1](#) - VERIFY STATUS OF CIRCUITS TO BE RELOCATED, RECORD CORRESPONDING MODEM TX LEVELS, AND ADD NEW USER ID NUMBERS
 - [ATTACHMENT 2](#) - INSTALL NEW AND/OR RELOCATE EXISTING MODEM AND SETUP PROCEDURE
 - [ATTACHMENT 3](#) - RELOCATE EXISTING AND/OR INSTALL NEW CIRCUIT(S)
 - [ATTACHMENT 4](#) - NEW AND RELOCATED USER CONNECTIONS

16. FAA DISTRIBUTION

Not applicable.

17. CHANGES TO TABLE OF CONTENTS (FAA)

Not applicable.

18. RECOMMENDATIONS FOR CHANGES (FAA)

Not applicable.

19. REPORTING INSTRUCTIONS

a. NWS

Report completed modification via the Engineering Management Reporting System Maintenance Record, according to the instructions in NWS Instruction (NWSI) 30-2104, Engineering Management Reporting System (EMRS), part 2 and Appendix E. Include the following information on the EMRS Report:

- An Equipment Code of RPG in Block 7.
- The appropriate serial number in Block 8.
- A Mod No. of 76 in Block 17a.

A sample EMRS report is provided as ATTACHMENT 7.

b. DoD

Update the AFTO Form 95 to show TCTO compliance. Report TCTO compliance in accordance with TO 00-20-2, Table 3-10, Rule 9.

Complete [ATTACHMENT 6](#), and return the information to the ROC by one of the four methods below:

- | | |
|---------------------|---|
| (1) Mail Address: | Program Branch, Retrofit Management Team
WSR-88D Radar Operations Center
3200 Marshall Ave., Suite 101
Norman, Oklahoma 73072-8028 |
| (2) Fax Number: | (405) 573-3480
ATTN: Retrofit Management Team |
| (3) E-mail Address: | NEXRAD.Logistics@noaa.gov |
| (4) Web Version: | http://www.roc.noaa.gov/ssb/logistics/completion.asp |

ATTACHMENT 1

VERIFY STATUS OF CIRCUITS TO BE RELOCATED, RECORD CORRESPONDING MODEM
TX LEVELS, AND ADD NEW USER ID NUMBERS

Initial Conditions:

All Radar Product Generator Processor/Communications Assembly (RPGPCA) components installed, equipment powered on, and RPG operational

Technician is logged into the RPG workstation as a user and RPG HCI is running


Technician has opened the front right door of the RPGPCA cabinet and can see the modems in the Modem Rack (UD70/170A14)

Purpose:

The purpose of this procedure is to verify operation of DoD dedicated user connections to be relocated and record the modem transmit level before relocation. In addition, if this modification is done by the ROC, the installer may opt to add the appropriate user IDs for new OPUP dedicated and dial users.

Procedure/Steps:

1. Refer to [ATTACHMENT 4, Table 1](#) to identify the RPG HCI Product Distribution Communications Status (PDCS) line number(s) for existing user connection(s) to be relocated. Evaluate the connection status for the line(s) of interest. Ensure the legacy PUP ID(s) are as shown in [ATTACHMENT 4, Table 1](#) for the lines of interest. To open, click on the **PDCS** box in the RPG HCI window. Verify the corresponding line number(s) for the circuit(s) that will be relocated is/are in **CONNECT** status. For FAA Redundant, verify the connection(s) achieve(s) **CONNECT** status on both channels.
2. Verify the correct legacy PUP ID(s) maps to the correct line number(s) on the PDCS, as per [ATTACHMENT 4, Table 1](#). Contact the WSR-88D Hotline at 1-800-643-3363 to notify them of any discrepancy before proceeding.
3. Refer to [ATTACHMENT 4, Table 1](#) to identify the corresponding circuits and modems to be relocated for each PDCS line checked in steps 1 and 2.
4. Record the transmit level (Tx level) in [ATTACHMENT 4, Table 1](#) for each dedicated modem, which is to be relocated. To determine the Tx level, perform steps [4a](#) through [4c](#) for each modem.

- a. Press the modem  **<RETURN>** key twice to display Data 14.4 T/D? or V.32b 14.4 T/D? (depending on the model of the modem) and Liquid Crystal Display (LCD) window.

ATTACHMENT 1 (Continued)

VERIFY STATUS OF CIRCUITS TO BE RELOCATED, RECORD CORRESPONDING MODEM
TX LEVELS, AND ADD NEW USER ID NUMBERS



- b. Press the **<ACROSS>** key twice (three times for a 33.6 modem SDC modem, e.g. part number PC42703) until the LCD shows either `PhaseJitter=x dg` or `Rx Level = x dbm`.



- c. Press the **<DOWN>** key until the LCD shows `Tx Level = x dBm`. Record the value of X on [ATTACHMENT 4, Table 1](#) corresponding to the end user's modem for each circuit to be relocated. The range of values for x is 0 to -15.
5. **For Site POC install:** The ID for each new OPUP user dedicated connection is provided in [ATTACHMENT 4, Table 1](#) and [Table 2](#). These dedicated user IDs will be added to the RPG's communications adaptation data in a subsequent software load as indicated underneath the ID (e.g. B5.0, B6.0, etc.). Not having the adaptation data now does not impact the user's dedicated connection operation or performance. The only impact is that no name will appear next to the user id number displayed in the PDCS window of the RPG HCI. Dial user IDs and permissions will be added to all appropriate RPGs in a subsequent RPG software build.
6. **For ROC install:** ROC personnel performing the installation will need to have the build specific ROC level adaptation data password. Should the installer choose to add the appropriate dedicated and dial user IDs, the adaptation data must be saved using the `save_adapt_floppy` command. The site should be provided this floppy as their new backup adaptation data floppy. The site should also be reminded that the resulting backup adaptation data floppy is only good for the currently installed RPG build, because there is not yet a merge capability in the RPG for communications related data.
- a. **Dedicated IDs:** The ID for each new OPUP user dedicated connection is provided in [ATTACHMENT 4, Table 1](#) and [Table 2](#). The dedicated user ID(s) associated to a particular RPG may be added to the RPG's communications adaptation data at the command line using `hci_usr &<Return>`. However, the site should be made aware the adaptation data will not be permanently incorporated for their site until the build indicated in [ATTACHMENT 4, Table 1](#) and [Table 2](#) or later is installed.
- b. **Dial IDs:** Dial user IDs and permissions may also be added using the PDCS window or the `hci_usr &<Return>` command. Dial user permissions incorporating all these new OPUP users will be updated in a subsequent RPG software build.

ATTACHMENT 2

INSTALL NEW AND/OR RELOCATE EXISTING MODEM AND SETUP PROCEDURE

Tools/Materials Required

- Modem "C" Kit, if supplied
- ESD component handling kit

Initial Conditions:

All RPGPCA components installed, equipment powered on, and the RPG is operational.

Technician has opened the front right door of the RPGPCA cabinet and is standing in front of the Modem Rack (UD70/170A14).

For User Connection Relocations Listed in [ATTACHMENT 4, Table 1](#), proceed only after contacted by the ROC OPUP deployment manager and an exact date has been coordinated for this procedure to be completed. The ROC Point of Contact (POC) may ask that only specific modems be relocated on one or more dates to facilitate the rollout of OPUP equipment.

For New User Connections listed in [ATTACHMENT 4, Table 2](#), proceed with this attachment at anytime.

PURPOSE

This procedure is for installation of new RPG dedicated modem(s), if supplied as part of the modification kit. The procedure also instructs specific sites to permanently relocate one or more dedicated modems. The relocated and new modems will also be programmed according to this procedure.

Procedures/Steps:

1. Read the instruction specific to this RPG in [ATTACHMENT 4, Table 1](#) and [Table 2](#), as applicable. These tables provide the information tailored for this RPG to relocate specific modem(s) and/or install new modem(s), as applicable.
2. Insert key into the lock on the modem rack door and turn key counterclockwise to unlock. Fully swing out the modem rack door.
3. Observe the status of the front panel LEDs on the unassigned modem(s) to be moved. The modem(s) should not have any activity on the TD, RD, or CD lights. If the Terminal Options CD setting is incorrectly set to "High" the CD light may be lit even if there is not a circuit connection. If it appears [ATTACHMENT 4, Table 2](#) instructs relocation of an active user's modem, advise the WSR-88D Hotline at 1-800-643-3363 of the discrepancy before proceeding. The WSR-88D Hotline will work with ROC System Engineering to determine the appropriate corrective action required and advise the technician how to proceed toward completion of this modification.

ATTACHMENT 2 (Continued)

INSTALL NEW AND/OR RELOCATE EXISTING MODEM AND SETUP PROCEDURE

****ESD** CAUTION **ESD****

All WSR-88D printed circuit cards are electrostatic sensitive devices which require special handling.

4. Put ESD wrist strap on bare wrist and connect clip lead to the chassis for proper ground.

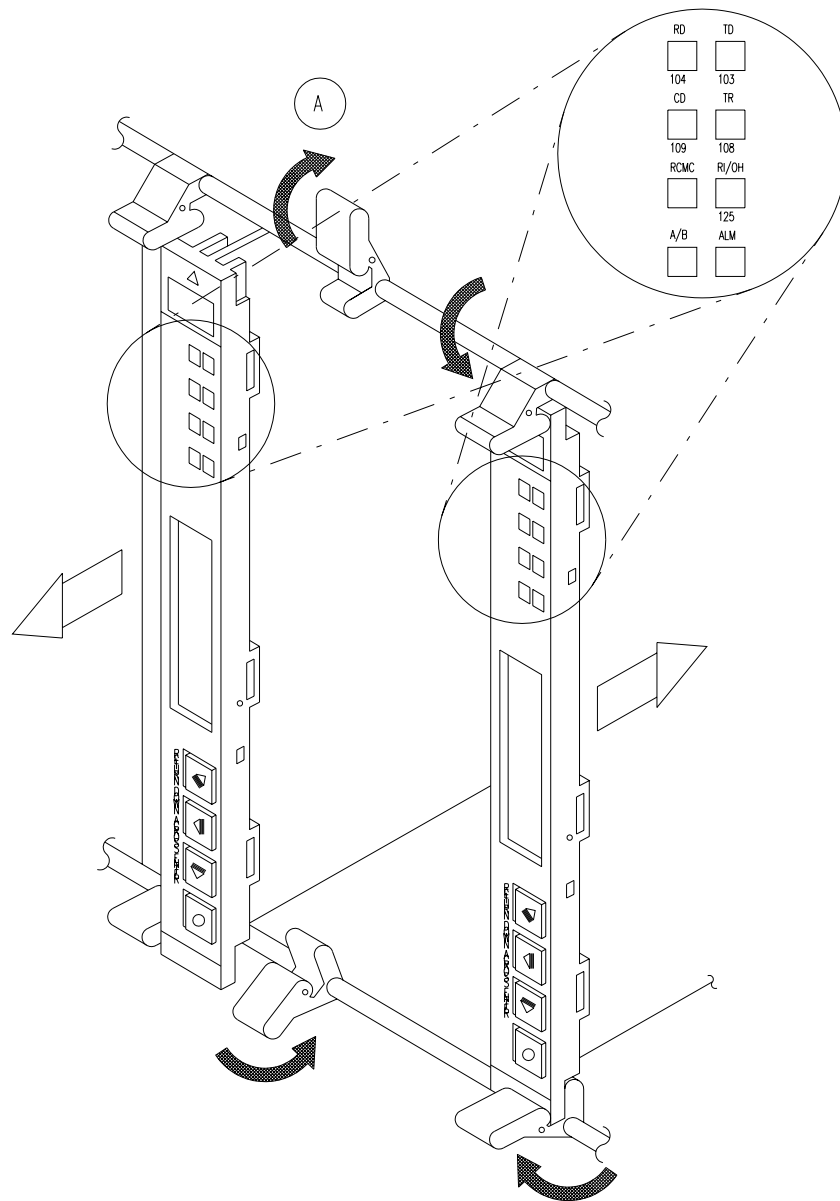
NOTE

Modem cards can be removed and installed while power is ON and software is running.

5. Perform steps 6 through 11.bl for each relocated modem to be removed and placed into a new slot as directed for this RPG by [ATTACHMENT 4, Table 1](#) and [Table 2](#). Perform steps 7 through 11.bl for each new modem to be installed as directed for this RPG by [ATTACHMENT 4, Table 2](#).
6. Remove the modem card from its present location in the Codex enclosure by rotating the ejectors simultaneously at the top and bottom of the modem card. Carefully slide the card out of its slot as show in [ATTACHMENT 2, Figure 2-1](#).

ATTACHMENT 2 (Continued)

INSTALL NEW AND/OR RELOCATE EXISTING MODEM AND SETUP PROCEDURE



NX1646

Figure 2-1. Dedicated Modem Card Removal and Replacement

ATTACHMENT 2 (Continued)

INSTALL NEW AND/OR RELOCATE EXISTING MODEM AND SETUP PROCEDURE

7. See figure 2-2. Check/set the DIP switches on the new/relocated modem as follows
 - 3263: 1 and 2 are ON, all others are OFF.

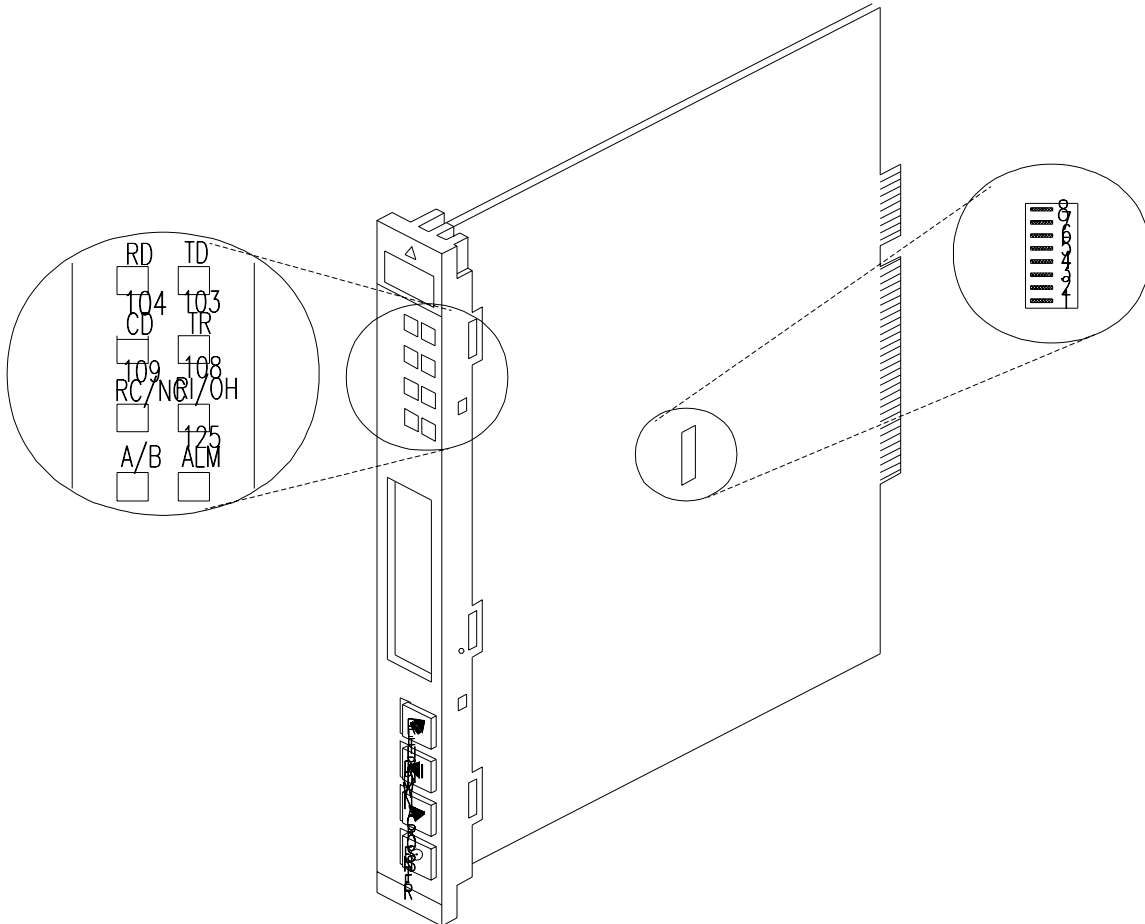


Figure 2-2. Dedicated Port (Rack-Mounted) Modem, Front Panel and DIP Switch Location

ATTACHMENT 2 (Continued)

INSTALL NEW AND/OR RELOCATE EXISTING MODEM AND SETUP PROCEDURE

8. Install the new or relocated modem card into the intended slot in the enclosures while ejectors are in position A as shown in [Figure 2-1](#). When the card makes contact with the ejectors, rotate the ejectors inward toward the card and press firmly to properly seat the card.
9. Remove the ESD strap from wrist and remove clip lead from chassis frame.
10. The following icons summarize the modem menu selection functions:



<RETURN> key - when pressed within a branch of the menu, changes the LCD to the branch title screen (eg. `TERMINAL OPT'S`). When pressed at a branch title screen, changes the LCD to the home screen (eg. `DATA 14.4T/D?`).



<DOWN> key - moves from branch to branch from the main menu and selects individual setting options within the branches.



<ACROSS> key - moves the screen along the branches of the modem menu tree. It also moves the cursor across data entry menus one character (or digit) at a time (eg. S-Reg menus).



<ENTER> key - selects the item displayed on the LCD as the current setting (if the screen displayed an = sign, it was already the current setting), or initiates an action (as in Reinit Memory?).

NOTE

Due to differences in modem models, some default display readings will vary between sites. Operators should carefully note desired modem settings and follow data input sequences until these settings are accomplished. (Example 1: While some systems default to a DTE Rate of 14.4, others default to 33.6. In the event the system defaults to 33.6, and the desired reading is 14.4, follow the key sequence until the display reading is 14.4. Example 2: While following procedures for the SñReg reading, the system may begin with S-Reg = 030 or it may default to some other reading. If the desired reading is S-Reg = 180, perform the key sequence until this reading is achieved.)

11. Perform the following steps to setup the modem(s) just installed:












ATTACHMENT 2 (Continued)

INSTALL NEW AND/OR RELOCATE EXISTING MODEM AND SETUP PROCEDURE

- a. Press the  **<RETURN>** key twice (ensures beginning from the home screen).
- b. Press the  **<ACROSS>** key until the display reads `Reinit Memory?`
- c. Press the  **<ENTER>** key once, the display reads `Reinit All Mem?`
- d. Press the  **<ENTER>** key again, the display reads `3263 Initial`
- e. Press the  **<RETURN>** key, the display reads `Disconnect T/D?`
- f. Press the  **<ACROSS>** key until the display reads `Power Up In=Old`
- g. Press the  **<DOWN>** key until the display reads `Power Up In:1`
- h. Press the  **<ENTER>** key, the display reads `Power Up In=1`
- i. Press the  **<RETURN>** key until the display reads `Disconnect T/D?`
- j. Press the  **<DOWN>** key until the display reads `MODULATION OPT'S`
- k. Press the  **<ACROSS>** key, the display reads `Line=Dial`












ATTACHMENT 2 (Continued)

INSTALL NEW AND/OR RELOCATE EXISTING MODEM AND SETUP PROCEDURE

- l. Press the  **<DOWN>** key until the display reads `Line:4W Lease`
- m. Press the  **<ENTER>** key until the display reads `Line=4W Lease`
- n. Press the  **<ACROSS>** key, the display reads `Min Rate=300`
- o. Press the  **<DOWN>** key until the display reads `Min Rate:4800`
- p. Press the  **<ENTER>** key until the display reads `Min Rate=4800`
- q. Press the  **<ACROSS>** key until the display reads `Mode=Originate`
- r. Press the  **<DOWN>** key until the display reads `Mode:Answer`
- s. Press the  **<ENTER>** key until the display reads `Mode=Answer`
- t. Press the  **<ACROSS>** key until the display reads `PSTN=On`
- u. Press the  **<DOWN>** key until the display reads `PSTN:OFF`
- v. Press the  **<ENTER>** key, the display reads `PSTN=OFF`












ATTACHMENT 2 (Continued)

INSTALL NEW AND/OR RELOCATE EXISTING MODEM AND SETUP PROCEDURE

- w. Press the  **<RETURN>** key, the display reads MODULATION OPT'S
- x. Press the  **<DOWN>** key until the display reads EC/DC OPT'S
- y. Press the  **<ACROSS>** key until the display reads Modem Flow=On
- z. Press the  **<DOWN>** key until the display reads Modem Flow:Off
- aa. Press the  **<ENTER>** key, the display reads Modem Flow=Off
- ab. Press the  **<RETURN>** key, the display reads EC/DC OPT'S
- ac. Press the  **<DOWN>** key until the display reads ACU OPT'S
- ad. Press the  **<ACROSS>** key, the display reads ACU Select=AT
- ae. Press the  **<DOWN>** key, the display reads ACU Select:None
- af. Press the  **<ENTER>** key, the display reads ACU Select=None
- ag. Press the  **<RETURN>** key, the display reads ACU OPT'S

ATTACHMENT 2 (Continued)

INSTALL NEW AND/OR RELOCATE EXISTING MODEM AND SETUP PROCEDURE

- ah. Press the  **<DOWN>** key, the display reads `TERMINAL OPT'S`
- ai. Press the  **<ACROSS>** key until the display reads `DTE Rate=Auto`
- aj. Press the  **<DOWN>** key until the display reads `DTE Rate:38.4`
- ak. Press the  **<ENTER>** key, the display reads `DTE Rate=38.4`
- al. Press the  **<ACROSS>** key until the display reads `Flow=XON/XOFF`
- am. Press the  **<DOWN>** key, the display reads `Flow:RTS/CTS`
- an. Press the  **<ENTER>** key, the display reads `Flow=RTS/CTS`
- ao. Press the  **<ACROSS>** key until the display reads `DTR=High`
- ap. Press the  **<DOWN>** key, the display reads `DTR:108.1`
- aq. Press the  **<ENTER>** key, the display reads `DTR=108.1`
- ar. Press the  **<ACROSS>** key until the display reads `RTS=High`


ATTACHMENT 2 (Continued)


INSTALL NEW AND/OR RELOCATE EXISTING MODEM AND SETUP PROCEDURE


- as. Press the  **<DOWN>** key, the display reads `RTS:Normal`
- at. Press the  **<ENTER>** key, the display reads `RTS=Normal`
- au. Press the  **<ACROSS>** key until the display reads `CTS=AsyncSync`
- av. Press the  **<DOWN>** key until the display reads `CTS:Normal`
- aw. Press the  **<ENTER>** key, the display reads `CTS=Normal`
- ax. Press the  **<ACROSS>** key until the display reads `DCD=High`
- ay. Press the  **<DOWN>** key until the display reads `DCD:Normal`
- az. Press the  **<ENTER>** key, the display reads `DCD=Normal`
- ba. Press the  **<ACROSS>** key until the display reads `DSR=High`
- bb. Press the  **<DOWN>** key until the display reads `DSR:Normal`
- bc. Press the  **<ENTER>** key, the display reads `DSR=Normal`

ATTACHMENT 2 (Continued)

INSTALL NEW AND/OR RELOCATE EXISTING MODEM AND SETUP PROCEDURE

bd. Press the  **<RETURN>** key, the display reads `TERMINAL OPT'S`


be. Press the  **<DOWN>** key until the display reads `TELCO OPT'S`

bf. Press the  **<ACROSS>** key until the display reads `LL Tx Level=0`


NOTE

For now this item should be set to -15 dBm for new dedicated modems without circuits connected to them. The transmit levels for new circuits will be adjusted when the circuit is installed and a time can be scheduled with the remote end maintainer to optimize the modem communications in both directions.


bg. If this modem is for a new OPUP connection that is identified in [ATTACHMENT 4, Table 2](#).

bh. Press the  **<DOWN>** key until the display reads `LL Tx Level:-15`


bi. If this modem is for a new OPUP connection that is identified in [ATTACHMENT 4, Table 2](#)

bj. Press the  **<ENTER>** key, the display reads `LL Tx Level=-15`

bk. If this modem is for an OPUP connection that is identified in [ATTACHMENT 4, Table 1](#)


Press the  **<DOWN>** key until the display reads `LL TX Level: -X`
(where X = the transmit level recorded in [ATTACHMENT 4, Table 2](#) as instructed by [ATTACHMENT 1, step 4](#) of this modification note.


bl. If this modem is for an OPUP connection that is identified in [ATTACHMENT 4, Table 1](#)


Press the  **<ENTER>** key, the display reads `LL TX Level = -X`
(where X is the transmit level selected in step [11bi](#) above.


ATTACHMENT 2 (Continued)

INSTALL NEW AND/OR RELOCATE EXISTING MODEM AND SETUP PROCEDURE

bm. Press the  <RETURN> key twice to return to the home screen

bn. Press the  <ACROSS> key until the display reads Save Changes=1

bo. Press the  <ENTER> key and wait until the display reads Save Complete!

bp. Press the  <RETURN> key twice to return to the home screen

ATTACHMENT 3

RELOCATE EXISTING AND/OR INSTALL NEW CIRCUIT(S)

Tools/Materials Required:

- Transmission Line Test Set AM-48 (SERD 15)
- Eight Wire Modular Adapter Harris 10220-100 or equivalent
- Impact Punch Tool, Jensen 23-814 or equivalent
- Impact Punch Tool 66 Blade, Jensen 23-066 or equivalent

Initial Conditions:

All RPGPCA components installed, equipment powered on, and RPG operational

For User Connection Relocations Listed in [ATTACHMENT 4, Table 1](#). Proceed only after contacted by the ROC OPUP deployment manager and an exact date has been coordinated for this procedure to be completed. The ROC POC may ask that only specific modems be relocated on one or more dates to facilitate the rollout of OPUP equipment.

For New User Connections listed in [ATTACHMENT 4, Table 2](#). Proceed with this attachment at anytime after the circuit has been installed by telco and the ROC OPUP deployment manager has notified your site that the remote OPUP end is also ready.

Purpose:

The purpose of this procedure is to either relocate or install new DoD dedicated circuits. Relocated circuit(s) will be moved from TB2 (2-RJ2DX) dedicated RPG punch block to the TB4 (4-RJ2DX) block. The circuits will also be verified as working before and after relocation. New circuits will be installed on TB4 (4-RJ2DX) block.

NOTE

This procedure assumes remote end circuits for stand-alone USAF OPUPs are terminated at the Base Weather Station (BWS) and have not been relocated/installed at a Base Network Control Center (BNCC). The procedure also assumes all telco circuits have been delivered/installed. If the telco service has not been delivered or a telco provider's circuit cannot be identified, please notify the OPUP deployment manager and/or the WSR-88D Hotline (800-643-3363) to assist you in obtaining the circuit identifying information or planned install date.

Procedures/Steps:

1. For circuits to be relocated per [ATTACHMENT 4, Table 1](#), perform steps [2](#) through [4](#).
2. Reference [Figure 3-1](#) to identify the corresponding 4-wire positions on the dedicated punch blocks for each dedicated circuit to be relocated. Mark, as necessary, directly on [Figure 3-1](#) the circuits to be relocated. All circuits will be relocated from TB2 to TB4.

**NWS: EHB-6, Modification Note 76
DoD: AFTO 31P1-4-108-632**

ATTACHMENT 3 (Continued)

RELOCATE EXISTING AND/OR INSTALL NEW CIRCUIT(S)

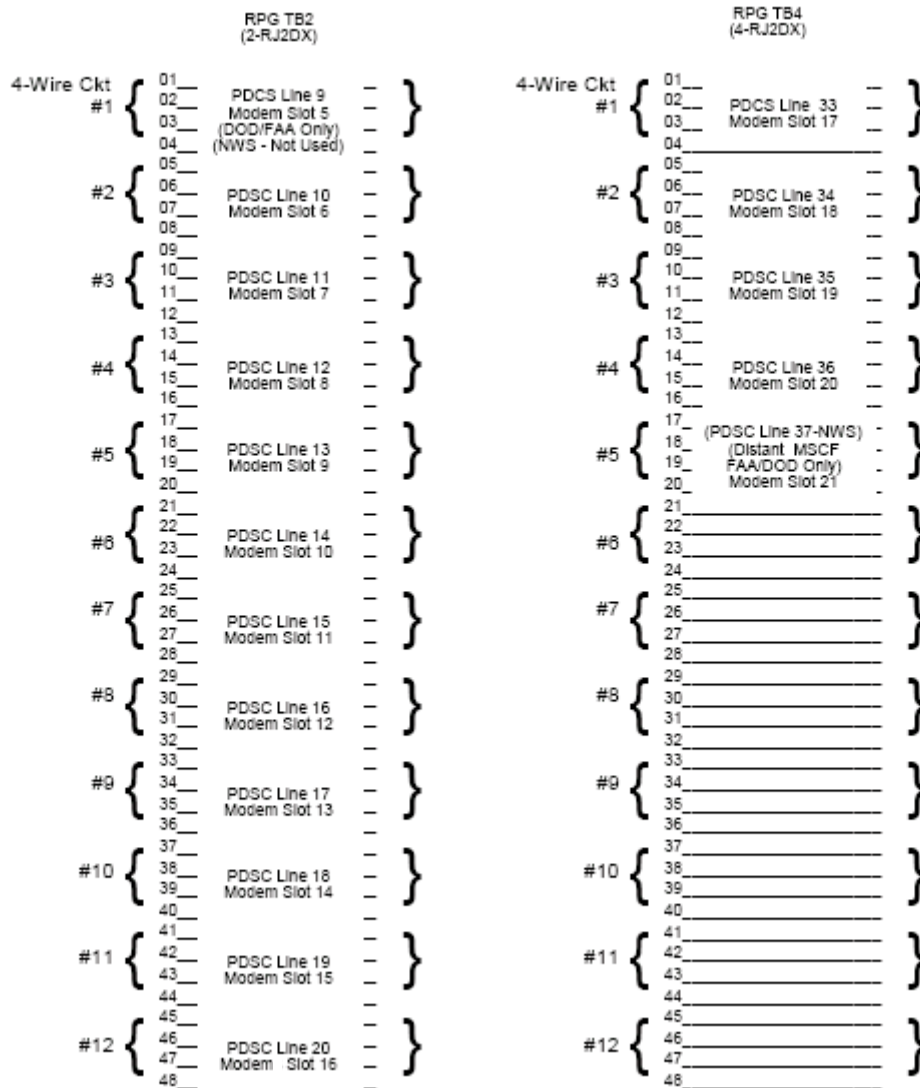


Figure 3-1. Quick Reference Map from RPG HCI PDSC to Modem Chassis to Dedicated Blocks

ATTACHMENT 3 (Continued)

RELOCATE EXISTING AND/OR INSTALL NEW CIRCUIT(S)

3. Remove the COHP-150 surge suppressors for the circuit to be relocated. If this is an NWS RPG, which has an extended RPG demarc, then remove the surge suppressors from the corresponding extended dedicated block instead of the NEXRAD block.
4. Before disconnecting the 4-wire circuit, note the color pattern (e.g. white/blue, blue/white, white/orange, and orange/white) used for the circuit to be relocated. It is important to record the specific color pattern sequence, so this sequence can be duplicated when the circuit is punched in its new location. Remove the 4-wire dedicated circuit from the telco side of the NEXRAD RPG dedicated block (2-RJ2DX or TB2). Punch in the circuit at its new location on 4-RJ2DX (or TB4) using an impact punch tool (Jensen 23-814 or equivalent), and re-install the COHP-150 surge suppressors at the new location. Proceed to step 10.
5. For new circuits to be installed using [ATTACHMENT 4, Table 2](#), perform the following steps starting at step 6.
6. Reference Figure 1 to identify the corresponding 4-wire positions on dedicated punch block TB4 (4-RJ2DX) for each dedicated circuit to be installed. Mark, as necessary, directly on [Figure 3-1](#) the circuits to be installed.
7. Install the new 4-wire dedicated circuit on the telco side of the NEXRAD RPG dedicated block. Punch in the circuit at its new location on 4-RJ2DX (or TB4) per [Figure 3-2](#) using an impact punch tool (Jensen 23-814 or equivalent). If this is an NWS RPG, which has an extended RPG demarc, then install the dedicated circuit on the telco side of the extended dedicated demarc block.

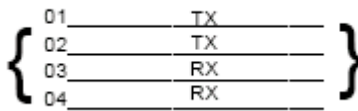


Figure 3-2. Four-Wire Circuit Order

8. Install two COHP-150 surge suppressors at the new circuit location.
9. After the RPG circuit installation/relocation, coordinate with the OPUP deployment manager and/or the remote end user's POC to verify whether the OPUP TCP/IP/PPP upgrade has been completed or if the remote end PPP modem has at least been connected. When the remote end user POC is ready, go to step 10.

ATTACHMENT 3 (Continued)

RELOCATE EXISTING AND/OR INSTALL NEW CIRCUIT(S)

10. For the modem corresponding to the relocated/new circuit, verify that the modem LCD reads V32b 14.4 T/D? or Data 14.4 T/D? and the TR light is lit solid. The RD and TD lights will flicker as data is transmitted. If the modem is not physically connected to a far end modem (no CD light), the TR light should be lit solid. If the modem is physically connected to a far end modem, but there is no software application connection, the TR light will be cycling (approximate 30 to 45 second cycles). A summary table of the RPG modem lights and their meanings is given below.

Summary Table of RPG Modem Lights	
RPG Modem Light(s)	Status
CD OFF	No physical connection to OPUP modem
CD ON	Good physical connection to OPUP modem
TR ON	RPG software/router communicating to RPG mdoem
CD ON/TR Cycling	No logical connection to OPUP software/router
CD ON/TR ON TD and RD Flickering	Good physical and logical connection to OPUP. OPUP and RPG software are communicating.

11. If the modems do not connect, work with the remote end user for new circuit installs (and relocated circuits, as necessary) to properly adjust the TX levels for the RPG modem (both channels for FAA redundant) and have the remote end optimize their transmit level using the AM-48 transmission test set using EHB 6-525, Revision 3, Dated 30 September 2004, paragraph 6-6.16, step 58.
12. If the modems still do not connect, verify that the RPG modem has been configured for the PPP option set in accordance with ATTACHMENT 2 (or EHB 6-525, Revision 3, Dated 30 September 2004, paragraph 6-6.16). This same setup procedure also applies to the OPUP modem, except the MODULATION OPT'S mode setting should be Originate on the OPUP modem end.
13. Once the OPUP has been installed, the RPG circuit has been relocated/installed, and the 4-wire circuit is working end to end, verify the connection status of the corresponding new line number (33 through 36 and 37 for NWS only) on the RPG HCI Product Distribution Comms Status (PDCS) window. To open, click on either the Narrowband Link or the PDCS Box in the RPG HCI window. Verify that the corresponding line numbers of all circuits that were relocated or installed new are in a CONNECT status. For FAA Redundant, verify that the connection achieves CONNECT status on both channels.

ATTACHMENT 3 (Continued)

RELOCATE EXISTING AND/OR INSTALL NEW CIRCUIT(S)

14. Note that the values in the ID and User Name columns may not be the same as they were before the OPUP upgrade and relocation. If the ROC performs the install, the new OPUP ID may be added to the RPG adaptation data as indicated in [ATTACHMENT 4](#), [Table 1](#) or [Table 2](#). This will only apply to the current build and may not be permanently added into adaptation data by the ROC for 1 or 2 (six month) build cycles. This has no operational impact, as the dedicated user can still connect without a name and ID. The PDCS will show the user's ID when the user connects, without a name. A subsequent software build will permanently include the correct information in RPG adaptation data.
15. Repeat this procedure for each 4-wire dedicated circuit to be relocated and/or installed.

ATTACHMENT 4

NEW AND RELOCATED USER CONNECTIONS

Table 1: Relocation Matrix for New Stand-Alone OPUPs which Replace a Legacy PUP

RPG Sitename	Existing					New				End User
	PDCS Line	Modem Slot UD70/71 A14	TX Level	4-Wire Ckt 2-RJ2DX/ TB2	Legacy OPUP ID	PDCS Line	Modem Slot UD70/ 71A14	4-Wire Ckt 2- RJ2DX/ TB4	New OPUP ID	
Eglin AFB	15	11		07	19	36	20	04	898 B6.0	Tyndal AFB
Ft Rucker	10	6		02	156	34	18	02	897 B6.0	Ft Rucker
Sterling	20	16		12	12	37	21	05	899 B6.0	Andrews AFB

ATTACHMENT 4 (Continued)

NEW AND RELOCATED USER CONNECTIONS

Table 2: New Dedicated OPUP Circuits Using a Relocated or a New Modem

Site Name	From Modem Slot (UD70/71 A14)	Installed At			End User	New ID
		PDCS Line	Modem Slot (UD70/71A14)	4-Wire Ckt (4-JR2DX/ TB4)		
Mobile	11	36	20*	04	Keesler Navy Training Det	896 B5.0

ATTACHMENT 5
EFFECTIVITY

NWS

NEXRAD Site Name	City, ST	EQP	SID	ORG Code
Eastern Region				
STERLING	STERLING, VA	RPG	LWX	WN9931
Southern Region				
MOBILE	MOBILE, AL	RPG	MOB	WP9223
DoD				
EGLIN AFB	RED BAY, FL	RPG	EVX	FE2823
FT RUCKER	ECHO, AL	RPG	EOX	FY4805

ATTACHMENT 6

RPG MODEM/CIRCUIT CHANGES FOR OPUP COMPLETION FORM

***** **DoD Only will complete and return this form** *****
NWS report completion through EMRS

Site Name: _____

Site Identifier: _____

Total Time to Complete this Modification Document: _____

Technician's Name(s): _____

Technician's Phone Number: _____

Date Completed: _____

Equipment Modified (SID) RPG _____

Problem(s) Encountered:

Upon completion of this form, return the information to the ROC using one of the four methods below:

1. Mailing Address: Program Branch, Retrofit Management Team
WSR-88D Radar Operations Center
3200 Marshall Ave., Suite 101
Norman, OK 73072-8028
2. FAX Number: (405) 573-3480
ATTN: Retrofit Management Team
3. E-mail Address: NEXRAD.Logistics@noaa.gov
4. Web Version: <http://www.roc.noaa.gov/ssb/logistics/complete/>

ATTACHMENT 7

A26 Detail Form - ESCM2, SILVER SPRING, MD :: JOHN MERHI - Microsoft Internet Explorer									
New A26 Commit A26 Place on Hold Copy A26 Delete A26 Detail Report Document Summary Help									
GENERAL INFORMATION									
NEW RECORD		WFO* LWX		Document No.* LWX41013004					
1. Open Date	Open Time	2. Op Initials	3. Response Priority		4. Close Date	Close Time			
10/13/2004	08:00	WSH	<input type="radio"/> Immediate <input type="radio"/> Low <input type="radio"/> Routine <input checked="" type="radio"/> Not Applicable		10/13/2004	10:00			
5. Maintenance Description 434 characters left RADAR, WSR-88D									
RPG Modem/Circuit changes for Open Principal User Processor (OPUP)									
EQUIPMENT INFORMATION									
6. Station ID*	7. Equipment Code	8. Serial Number			9. TM	10. AT	11. How Mal		
LWX	RPG	DC098			M	M	999		
Alert: Time Remaining: 2:00 (For Block 12 use only)									
12. EQUIPMENT OPERATIONAL STATUS TIMES									
a. Fully Operational		b. Logistic Delay		c. All Other		d. Logistic Delay		e. All Other	
Hours	Minutes	Hours	Minutes	Hours	Minutes	Hours	Minutes	Hours	Minutes
13. PARTS USAGE and CONFIGURATION MANAGEMENT REPORTING									
ASN	Vendor Part No. (New Part)	Serial Number (Old Part)	Serial Number (New Part)	New Row					
				Delete Row					
14. WORKLOAD INFORMATION									
a. Routine		b. Non-Routine		c. Travel		d. Misc		e. Overtime	
Hours	Minutes	Hours	Minutes	Hours	Minutes	Hours	Minutes	Hours	Minutes
						2	0		
MISCELLANEOUS INFORMATION									
15. Maintenance Comments 596 characters left									
Add/relocate modems, program new modems, and relocate dedicated DoD telecommunications circuits on the NEXRAD RPG demarc blocks, I.A.W. NEXRAD Mod Note 76									16. Tech Initials
									JST
17. SPECIAL PURPOSE REPORTING INFORMATION									
a. Mod No.	b. Mod Act/Deact Date	c. Block C	d. Trouble Ticket No.	e. Block E					
76	10/13/2004								

